

Field Manual
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Technical Order
36-1-40

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OPERATIONS AND MAINTENANCE OF ORDNANCE MATERIEL IN COLD WEATHER

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PREFACE

As stated in Field Manual (FM) 100-1, *The Army*, it is the Army's fundamental purpose to win wars through land force dominance regardless of location or climate. This FM provides general doctrinal and technical guidance for operating equipment and ordnance materiel under extremely harsh cold weather conditions (0° to -65° F). Its primary purpose is to familiarize operators and crews with the special procedures and techniques for working in sub-zero temperatures. Also, this manual will assist unit commanders, supervisors (motor sergeants, battalion motor officers [BMOs]), and maintenance personnel in anticipating and planning for the onset of cold weather or an arctic deployment. Failure to follow this guidance can cause injury to personnel and damage to equipment, besides limiting mission accomplishment.

This FM does not replace applicable technical manuals (TMs) for specific equipment operations, servicing, or repair. It is intended to provide an overview of the special and unique difficulties encountered in cold weather operations. Refer to the appropriate operator or higher-level manual for specific instructions.

The proponent of this publication is Headquarters, United States Army Training and Doctrine Command (TRADOC). Much of the information in this manual was provided by the USA Cold Regions Test Activity, which is responsible for testing equipment designed for use by the soldier on the winter battlefield and the USA Cold Regions Research and Engineering Laboratory, which exists largely to solve technical problems that develop in cold regions, especially problems related to construction, transportation, and military operations.. Access to more information can be obtained through points of contact on their World Wide Web pages. Submit changes for improving this publication on DA Form 2028 (Recommended Changes to Publications and Blank Forms), directly to:

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Note: Unless otherwise stated, whenever the masculine gender is used, both men and women are included.
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Chapter 1 Cold Weather Considerations

"Every mile is two in winter."

George Herbert

Section I The Cold Weather Challenge

IMPACT ON MILITARY FORCES

The cold has been identified as an enemy of military forces and equipment since the beginning of recorded history. When employed in a cold region, a force actually faces two enemies--the tactical enemy and the environment that also aggressively attacks and can destroy equipment and men. The impact of cold weather on combat forces can readily be seen during decisive campaigns in history. Napoleon's disastrous march into Russia, Germany's failed conquest of Russia during World War II, and the operations of United Nations forces in Korea are modern examples. With United States (US) reliance on global force projection, Army forces must prepare to operate in a variety of climates, including extreme cold.

OPERATIONAL EFFECTS

Army forces may be required to conduct sustained operations in temperatures as low as -65° Fahrenheit (F). Under such conditions, personnel are subject to decreased efficiency and cold casualties, equipment is prone to breakdowns, supply problems are increased, and operations are restricted and complicated by the environment.

It is the responsibility of unit leaders to ensure that personnel and equipment can withstand the challenges of cold weather. US Army equipment is among the best in the world for use in cold climates. However, soldiers and their leaders must understand the effects of cold weather and adapt operations and maintenance to overcome environmental conditions.

Section II Operational Considerations

PERSONNEL

Since most US units are stationed in temperate or tropical climates, soldiers generally lack adequate training or experience in cold weather operations and maintenance. If troops stationed in temperate climates are to be expected to move to cold climates and

perform their missions, they must be prepared for it.

A large part of a soldier's time and energy in cold weather is spent in self-preservation. This naturally reduces the efficiency of personnel when operating and maintaining materiel. Besides operating equipment, soldiers must learn to protect